

On the occurrence of *Coenonympha hero* L. (Lepidoptera - Satyridae) in the High Tatras

L. VÍŤAZ

Kvetinová 1, Nové Mesto nad Váhom, SK - 915
01, Slovakia

Abstract. Occurrence of the species *Coenonympha hero* was reviewed, which had not been reported from Slovakia for a long time and was considered extinct from the fauna of Slovakia. The species was found in the surroundings of Dolný Smokovec, High Tatras, in the years 1983, 1991 and 1993. The localities where it occurs are found in an area that is considerably influenced by human activities. It is urgent to solve detailed questions on the distribution and biology in this region. According to the results of a further study measures should be taken to preserve the populations of *Coenonympha hero* in the High Tatras.

The species *Coenonympha hero* (Linné 1761) is an important satyrid butterfly in Slovakia. Its distribution is known from France to Scandinavia, through Central Europe and in Asia up to the river Amur, Korea and Japan. In Central Europe it occurs mostly very locally and rarely and is absent from many areas. In Germany it is very rare (Koch 1988). In Bohemia and Moravia, where several localities are known from the past, this species disappeared and is considered extinct (Kudrna and Králiček 1991). The species was mentioned from northern Tyrol in Austria. In Hungary it has been reported from the locality of Sopron, but its occurrence there has not been confirmed (Bálint 1991). *Coenonympha hero* is locally more common in Poland. I have not been able to obtain data on its occurrence in the Ukraine.

The most complete list of localities from which *Coenonympha hero* has been reported on Slovak territory is included in Hrubý (1964). The author mentioned 12 localities, seven of which are in the High Tatras. However, most of these data are old. No new records have been published from Slovakia since 1964. This has recently led to the opinion that *Coenonympha hero* has become extinct in Slovakia (Kulfan and Kulfan 1991).

In the area of the High Tatras I have observed the occurrence of *Coenonympha hero* in the surroundings of Smokovec (Slovakia Fauna Databank (DFS) mapping square 6887), first on 4 July 1983, later repeatedly on 26 June 1991. In both cases, however, I only observed imagos; at neither occasion any material evidence was collected.

More detailed observation on its occurrence was made on a personal excursion to the High Tatras on 21 June 1992. I succeeded in confirming the occurrence of *Coenonympha hero* at the site of od lesom in the vicinity of Dolný Smokovec (DFS 6887), at an altitude of 820-829 m above sea level. The species occurred at this site at the edges of woodland, on forest-paths, in the neighbourhood of the railroad Poprad - Smokovec, in open woodland, on clearings and in meadows. It avoids open spaces and prefers to rest on deciduous shrubs bordering the mentioned habitats, but in grass as well. The butterflies are flighty. After startling they fly away in a fluttering flight and do not return to the place from which they were disturbed. They are strongly heliophilic. On the day of my excursion I established the separate occurrence of males and females, though the imagos of both sexes showed signs of long-time flying (injuries). I observed about 20 to 25 specimens. Three males and two females were deposited in my collection as evidence. The caught specimens did not show any deviations from the nominal form. The males have 17 mm and the females 19 mm long forewings (measured from the root of the wing to the apex).

In the mentioned area also the following *Lepidoptera* species occurred: *Lasiommata maera* L., *Coenonympha glycerion* Bkh., *Pararge aegeria* L., *Carterocephalus palaemon* Pallas, *Pieris napi* L., *Pieris brassicae* L., *Cyaniris semiargus* Rott., *Lycaena hippothoe* L. and *Melitaea athalia* Rott. I observed the butterflies from 10.00 am.

As *Coenonympha hero* inhabits scrub areas, which are found practically everywhere in this woody locality of the High Tatras, it supposedly also occurs in the surroundings as well as in other appropriate habitats.

The species was also observed in the vicinity of Tatranská Lomnica (DFS 6887) on 6 to 9 July 1991 at an altitude of 800 m (Kulfan 1993), which confirms the presumption made above.

As this area is so far the only recent one where *Coenonympha hero* occurs in Slovakia, the realization of a complete protection of this population and the habitats it inhabits is needed. Ideal conservation would consist in the protection of the biotopes which the species inhabits and which are threatened by the impact of tourist facilities. It is true that the species has made adaptations to man-made habitats such as borders of forest-paths and surroundings of railroads. However, the habitats in which it occurs in the wild and semi-wild are more important for the long term conservation of the species and should

be protected. Devastation of sites, widespread environmental pollution and over-collecting have contributed to the extinction of *Coenonympha hero* in Bohemia, Moravia and elsewhere in its former distribution area.

As the butterfly is a very rare and local species, which has neither been abundant in the past, it will be very difficult to meet its ecological demands and cultivate microclimate of the habitat it prefers. We do not know very much on the biology of the species in the region of the High Tatras, including its complex distribution and the state of its populations in this area. All these urgent questions request further study in order to conserve *Coenonympha hero* for the fauna of Slovakia.

For the time being it can be judged that in order to conserve the native habitats at the localities of its occurrence, even normal forest activities and hand-mowing of the habitats should not have an unfavourable impact on the populations. The development of the caterpillars of *Coenonympha hero* takes place on grasses, whose vegetative parts quickly regenerate after cutting. According to my experiences with laboratory breeding of *Satyridae* species, caterpillars of these accept food mostly at night and hide away in grass tufts during the day. In case they are on a plant in the day-time and get disturbed, they leave the plant and fall into the vegetation. From this follows, that the caterpillars are not easily harmed mechanically. But possible hay-making in the time that *Coenonympha hero* is in the pupa stage could impact negatively on population sizes.

I suppose that finds of *Coenonympha hero* in the area of the High Tatras, which I have described in this paper, are not the only ones

since 1964, and that there are more specimens present in private collections in Slovakia or abroad which have been collected after 1964. The reasons why such finds may not have been published in generally accessible literature, probably lie mostly in the fear that the localities might get exhausted by over-collecting shortly after the publication of the exact localities where this exceptional species occurs.

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